

## Wheat, Hard Red Winter

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Winter wheat varieties were compared in replicated trial plots at Crookston, Lamberton, Roseau, and St. Paul. These plots were handled so that the factors affecting yield and other characteristics are as nearly the same for all varieties at each location as is possible. These winter wheat trials are not designed for crop (species) comparisons, because the various crops are grown on different fields or with different management. These data should be used only to compare varieties within a table.

### Variety Selection Criteria

The success of a winter wheat variety depends largely on its ability to survive Minnesota winters. Research on the northern plains has shown that planting winter wheat in standing stubble using no-till methods will decrease winterkill considerably. A stubble height of 4 to 6 inches is ideal but even shorter soybean stubble provides some protection. Trapped snow provides additional protection that increases the odds that the young seedlings will survive. While all winter wheat varieties should be considered susceptible to very susceptible

**Table 1. Growth characteristics of winter wheat varieties.**

| Variety                    | Origin <sup>1</sup> | PVP Status <sup>2</sup> | Heading,<br>Days From Jan. 1 <sup>3</sup> | Height,<br>Inches <sup>3</sup> | Winter-<br>Hardiness <sup>4</sup> | Lodging<br>Rating | Test Weight,<br>Lb /Bu |        | Protein % at<br>12% Moisture |        | Rust Resistance <sup>5</sup> |      |
|----------------------------|---------------------|-------------------------|---|--------------------------------|-----------------------------------|-------------------|------------------------|--------|------------------------------|--------|------------------------------|------|
|                            |                     |                         |   |                                |                                   |                   | 2011                   | 2-Year | 2011                         | 2-Year | Leaf                         | Stem |
| Accipiter                  | 2008 CAN            | PVP (pending)           | 166                                       | 34                             | MH                                | Strong            | 59.3                   | 59.3   | 11.0                         | 11.5   | MS                           | —    |
| Arapahoe                   | 1988 NE             | PVP (94)                | 165                                       | 35                             | M                                 | M Strg            | 57.6                   | 58.4   | 11.6                         | 12.0   | MR                           | MR   |
| Art                        | 2008 AgriPro        | PVP (94)                | 163                                       | 31                             | M                                 | M Strg            | 58.1                   | 58.9   | 12.2                         | 12.4   | —                            | —    |
| Boomer                     | 2009 WestBred       | PVP (94)                | 167                                       | 34                             | MH                                | M Strg            | 57.1                   | 58.0   | 11.7                         | 12.2   | MR                           | —    |
| CDC Falcon                 | 1998 CAN            | PVP (94)                | 167                                       | 31                             | MH                                | Strong            | 57.4                   | 57.9   | 11.7                         | 11.8   | MS                           | R    |
| CDC Ptarmigan <sup>6</sup> | 1999 CAN            | none                    | 168                                       | 39                             | —                                 | —                 | 55.3                   | 54.9   | 10.8                         | 10.6   | S                            | —    |
| Darrell                    | 2006 SDSU           | PVP (94)                | 166                                       | 36                             | M                                 | M Strg            | 58.2                   | 59.0   | 11.5                         | 11.9   | MS                           | —    |
| Hawken                     | 2007 AgriPro        | PVP (94)                | 164                                       | 31                             | P                                 | Strong            | 58.6                   | 58.4   | 12.0                         | 12.5   | R                            | —    |
| Jerry                      | 2001 NDSU           | none                    | 167                                       | 38                             | H                                 | M Strg            | 58.3                   | 58.9   | 12.2                         | 12.4   | MR                           | R    |
| Lyman                      | 2008 SDSU           | PVP (94)                | 164                                       | 36                             | —                                 | M Strg            | 59.0                   | 60.2   | 11.7                         | 12.3   | MR                           | —    |
| Millennium                 | 1999 NE             | PVP (94)                | 165                                       | 38                             | M                                 | Strong            | 59.5                   | 59.7   | 11.8                         | 12.0   | MR                           | R    |
| Overland                   | 2007 NE             | PVP (94)                | 165                                       | 36                             | M                                 | Strong            | 58.3                   | 59.2   | 11.7                         | 12.0   | MR                           | —    |
| Peregrine                  | 2008 CAN            | PVP (pending)           | 168                                       | 39                             | MH                                | M Strg            | 59.3                   | 59.9   | 11.3                         | 11.4   | MR                           | —    |
| Roughrider                 | 1975 NDSU           | none                    | 168                                       | 43                             | VH                                | Med.              | 59.5                   | 60.1   | 11.6                         | 12.3   | S                            | R    |
| Settler CL <sup>7</sup>    | 2008 NE             | PVP (94)                | 164                                       | 32                             | —                                 | Strong            | 59.4                   | 59.6   | 11.3                         | 11.8   | —                            | —    |
| Striker                    | 2009 WestBred       | PVP (94)                | 166                                       | 30                             | MH                                | Strong            | 57.9                   | 59.1   | 11.8                         | 12.3   | —                            | —    |
| WB-Matlock                 | 2010 WestBred       | PVP (pending)           | 167                                       | 35                             | —                                 | —                 | 59.2                   | 59.6   | 11.9                         | 12.3   | —                            | —    |
| Mean                       |                     |                         | 165.7                                     | 35.1                           |                                   |                   | 58.5                   | 59.1   | 11.7                         | 12.1   |                              |      |

<sup>1</sup> Abbreviations: CAN = Crop Development Centre, Saskatoon, Canada; NDSU = North Dakota State University; NE = Nebraska Agricultural Experiment Station; SDSU = South Dakota Agricultural Experiment Station.

<sup>2</sup> PVP = plant variety protection. When the letters are followed by (94), seed of that variety may not be sold by a grower to anyone without express permission of the variety's developer/owner. If the PVP designation is followed by (pending) consider that the variety has PVP (94) protection.

<sup>3</sup> 2011 data.

<sup>4</sup> Winterhardness rating is a relative ranking that includes data from Minnesota, North Dakota, Nebraska and South Dakota: VH = very high, H = high, MH = moderately high, M = moderate, P = poor.

<sup>5</sup> R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible.

<sup>6</sup> CDC Ptarmigan is a soft white winter wheat.

<sup>7</sup> Settler CL is marketed by Husker Genetics and may be used as a component of the BASF Clearfield® Production System with Beyond® herbicide.

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to FHB, they head earlier than spring wheat varieties and have a better chance of escaping damage from FHB. Most winter wheat varieties are also susceptible to very susceptible to the leaf diseases other than the rusts. Research results in the region indicate that fungicides to control leaf diseases and suppress FHB are nearly always warranted and should be considered an integral part of the your production practices.

All varieties listed are hard red winter wheats with the exception of CDC Ptarmigan, which is a soft white winter. Data of one new variety, WB-Matlock, are added to the report this year.

### Test Plot Research

Jim Cameron, Dave Grafstrom, Steve Quiring, and Donn Vellekson established and managed the test plots

### Hard Red Winter Wheat Planting Rate and Date

Bushel Weight (Pounds).....60  
 Seeds/Pound.....14,500  
 Pounds Rate/Acre.....75+  
 Seeds/Square Foot..... 25  
 Planting Date.....Aug. 20 – Sept. 20

**Table 2. Yield (percent of the mean) of winter wheat varieties.**

| Variety          | Crookston |        | Lamberton <sup>1</sup> | Roseau |        | St Paul <sup>1</sup> | State |        |
|------------------|-----------|--------|------------------------|--------|--------|----------------------|-------|--------|
|                  | 2011      | 2-Year | 2-Year                 | 2011   | 2-Year | 2-Year               | 2011  | 2-Year |
| Accipiter        | 92        | 91     | 99                     | 109    | 107    | 107                  | 100   | 100    |
| Arapahoe         | 96        | 97     | 107                    | 102    | 98     | 97                   | 99    | 98     |
| Art              | 107       | 96     | 101                    | 97     | 101    | 92                   | 102   | 99     |
| Boomer           | 110       | 102    | 99                     | 99     | 103    | 107                  | 104   | 102    |
| CDC Falcon       | 95        | 100    | 98                     | 96     | 95     | 101                  | 95    | 99     |
| CDC Ptarmigan    | 103       | 100    | —                      | 116    | 111    | —                    | 110   | 97     |
| Darrell          | 82        | 99     | 102                    | 102    | 109    | 100                  | 92    | 102    |
| Hawken           | 119       | 113    | 105                    | 88     | 96     | 92                   | 103   | 104    |
| Jerry            | 110       | 105    | 101                    | 92     | 94     | 101                  | 101   | 99     |
| Lyman            | 98        | 104    | 93                     | 91     | 93     | 111                  | 95    | 100    |
| Millennium       | 124       | 100    | 105                    | 112    | 103    | 95                   | 118   | 102    |
| Overland         | 102       | 106    | 103                    | 97     | 99     | 99                   | 100   | 104    |
| Peregrine        | 103       | 104    | 98                     | 115    | 102    | 100                  | 109   | 98     |
| Roughrider       | 78        | 90     | 83                     | 90     | 89     | 78                   | 84    | 84     |
| Settler CL       | 99        | 97     | —                      | 111    | 106    | —                    | 105   | 104    |
| Striker          | 104       | 105    | 102                    | 93     | 100    | 109                  | 98    | 104    |
| WB-Matlock       | 81        | 92     | 103                    | 108    | 105    | 110                  | 95    | 102    |
| Mean (Bu/A)      | 54.0      | 64.4   | 80.3                   | 75.9   | 77.0   | 76.2                 | 65.0  | 77.0   |
| LSD (0.10)       | 30.5      | 18.3   | 14.6                   | 23.9   | 14     | 24.9                 | 20.4  | 9.7    |
| No. Environments | 1         | 2      | 2                      | 1      | 2      | 2                    | 2     | 6      |

<sup>1</sup> 2-year data from Lamberton and St. Paul are from 2009 and 2010. The 2011 Lamberton and St. Paul locations were abandoned due to winterkill and bird damage, respectively.

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